UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/597,822 | 08/09/2006 | Martin J. Edwards | GB040040 | 6742 |

24737 7590 08/19/2008

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

| EXAMINER | |
|---|---|
| WOOLCOCK, LENWORTH A | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2629 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 08/19/2008 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/597,822 | EDWARDS, MARTIN J. | |
| | Examiner | Art Unit | |
| | LENWORTH WOOLCOCK | 2629 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *09 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 August 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Drawings*

Figure 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

**Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. **Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading**. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.

(b) CROSS-REFERENCE TO RELATED APPLICATIONS.

(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.

(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.

(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.

(f) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(g) BRIEF SUMMARY OF THE INVENTION.

(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(i) DETAILED DESCRIPTION OF THE INVENTION.

(j) CLAIM OR CLAIMS (commencing on a separate sheet).

(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(I) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Edwards et al (US 2002/0054005).

Consider claim 1, Edwards discloses an active matrix display device comprising a row and column array of picture elements **(see fig. 1)**, sets of row and column address conductors (18, 19) for selecting rows of picture elements and providing data signals to the picture elements of a selected row respectively **(see fig. 1)**, drive means (21, 23, 25) for supplying selection signals and multi-bit digital data signals respectively to the set of row address conductors and the set of column address conductors **(see fig. 1, elements 21, 23, and 25)**, and in which the multi-bit digital data signals supplied to the column address conductors are converted into analogue voltage levels for use by

the picture elements by a plurality of serial charge redistribution digital to analogue conversion means **(see fig. 3 and par. [0023]-[0024])**, each conversion means (30A, 30B, 30C)comprising at least first and second capacitances interconnectable by at least one conversion switch **(see fig. 3)** and between which charge is shared **(see fig. 3)**, and in which the first and second capacitances of a conversion means are provided by the capacitances of two column address conductors **(see fig. 7, where the capacitors of column 19a and 19b are shared)**, wherein the drive means is arranged to alternate the supply of data signals to the first and second column address conductors of each conversion means **(see par. [0028] and fig. 4, where the converted voltage is represented on one of the column electrodes only and switch A and B are switched alternately)**.

Consider claim 2, Edwards discloses the column address conductor (19) of a conversion means to which the data signals are applied is changed after one or more complete multi-bit signal conversions performed by the conversion means **(see par. [0028])**.

Consider claim 3, Edwards discloses the supply of data signals to the column address conductors (19) of each conversion means is controlled by a switch arrangement **(see fig. 7, switch A and B controls the supply to each column conductor)**.

Consider claim 4, Edwards discloses the switch arrangements of all conversion means are operable together by the drive means **(see par. [0021], the switch arrangement for the conversion means all work together to drive the display)**.

Consider claim 5, Edwards discloses the switch arrangement comprises a respective switch device connected between a column address conductor and a serial digital data signal output of the drive means **(see fig. 7, where switch A and B are between a column address conductor and a serial digital data signal output)**.

Consider claim 9, Edwards discloses the picture elements comprise liquid crystal display elements **(see abstract)**.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards et al (US 2002/0054005) in view of Nakajima et al (US 6157358).

Consider claim 6, Edwards discloses the limitation of claim 1. Edwards does not specifically disclose the polarity of the voltage provided to the picture elements is

inverted periodically, and wherein the alternation of the column conductors (19) of a conversion means to which a data signal is applied to generate the analogue voltage level for a given picture element is synchronized with the inversion of the picture element voltage. Nakajima discloses the polarity of the voltage provided to the picture elements is inverted periodically, and wherein the alternation of the column conductors (19) of a conversion means to which a data signal is applied to generate the analogue voltage level for a given picture element is synchronized with the inversion of the picture element voltage **(see fig. 1 and col. 3 lines 39-49)**.

It would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Edwards, and have discloses the polarity of the voltage provided to the picture elements is inverted periodically, and wherein the alternation of the column conductors (19) of a conversion means to which a data signal is applied to generate the analogue voltage level for a given picture element is synchronized with the inversion of the picture element voltage, as taught by Nakajima, thus preventing crosstalk.

Consider claim 7, Nakajima discloses the drive means and the conversion means are operable such that for a given picture element the column address conductor (19) of its associated conversion means to which a data signal is applied is changed each time the polarity of the picture element voltage is inverted **(see fig. 1 and col. 3 lines 39-49)**.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards et al (US 2002/0054005) in view of Nakajima et al (US 6157358) in further view of Janssen et al (US 6469687).

Consider claim 8, Edwards and Nakajima discloses the limitations of claim 6 (see above), and wherein the drive means and the conversion means are operable such that for a given picture element the column address conductor (19) of its associated conversion means to which a data signal is applied is changed each time the polarity of the picture element voltage is inverted **(see above)**. Edward and Nakajima does not specifically disclose the data signal that is applied is changed every second time the polarity of the picture element is inverted. Janssen discloses the data signal that is applied is changed every second time the polarity of the picture element is inverted **(see col. 2, lines 4-43)**.

It would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Edwards and Nakajima, and have the data signal that is applied is changed every second time the polarity of the picture element is inverted, as taught by Janssen, thus reducing or eliminating sampling errors, as discussed by Janseen **(see col. 2 lines 4-7)**.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards et al (US 2002/0054005) in view of Janseen et al (US 6469687).

Consider claim 10, Edwards discloses the limitations of claim 9. Edwards does not specifically disclose wherein the drive means is arranged to alternate the supply of

data to the first and second column address conductors with a period which is shorter than the response time of the liquid crystal material. Janseen discloses the drive means is arranged to alternate the supply of data to the first and second column address conductors with a period which is shorter than the response time of the liquid crystal material **(see col. 6 lines 10-23)**.

It would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Edwards, and have the drive means is arranged to alternate the supply of data to the first and second column address conductors with a period which is shorter than the response time of the liquid crystal material, as taught by Janseen, thus preserving the brightness of the display, as discussed by Janseen **(see col. 6 lines 10-23)**.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LENWORTH WOOLCOCK whose telephone number is (571)270-5152. The examiner can normally be reached on M-F 8:30am - 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on 571-272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lenworth Woolcock/
Examiner, Art Unit 2629
/Amare Mengistu/
Supervisory Patent Examiner, Art Unit 2629